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ABSTRACT

The present investigation attempted to assess the psychological aftereffects of mastectomy in women. An edited version of the Berscheid, Walster, and Bohrnstedt Body Image Questionnaire (1972) and a focused interview were administered to three groups of female surgical patients both pre- and postoperatively. Significant differences were found between groups presurgically on time lag before calling doctor and amount of anxiety expressed in the interview. Breast surgery seems to elicit more anxiety, as evidenced by shorter times between appearance of symptom and contacting doctor, and spontaneous expression of fear of mutilation or death in the interview. Significant postsurgical decreases were found for all groups in self-concept and satisfaction with intimate relationships. The defensive operation of denial is hypothesized to be masking postsurgical differences in the mastectomy patients. (Author)

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EFFECTS OF RADICAL MASTECTOMY ON A
WOMAN'S FEMININE SELF-CONCEPT

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The leading cause of cancer incidence and death in women in the United States is breast cancer, which is usually treated with a surgical procedure known as radical mastectomy, wherein the breast and underlying tissue are amputated. In light of the current controversy among surgeons concerning the merits of a new treatment procedure, lumpectomy (Crile, 1973), in which merely the tumor, not the breast, is removed, it is important to examine the psychological effects of mastectomy, the more extensive of the two treatments.

In addition to the fears and anxieties caused by breast cancer itself, women suffer from the loss of the body part (with mastectomy). In a study of four adult amputees, Rosen (1950) found them unusually able to deny or minimize the unpleasant reality of their loss, but unable to truly cope with the loss, becoming depressed. Rosen concluded that the appropriate "mourning" response to the loss of an important body part or function becomes pathological when it forces the patient to abandon usual spontaneous and active attempts at readjustment because of the sudden breakdown of the denial mechanism before the ego has had time to assimilate the new reality.

The effects of mastectomy would be expected to differ from other surgery because of the sexual implications of the loss of a breast, and its devastating effect on a woman's feminine self image and physical attractiveness, especially in our breast conscious society.³ With this in mind, several investigators have examined the psychological effects of mastectomy. Benneker and Cutler (1952) point out that the loss of the breasts, among a woman's most prized physical possessions, severely damages feminine pride, necessitates changing the mind picture of the body, and shakes the foundation

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of feminine identification. Bard and Sutherland (1955) found evidence that for some women self-worth and acceptance as women was predicated on body attractiveness throughout their lives. The mere possibility of losing a breast led them to feel that life was no longer worth living. Fitzpatrick (1970) observed that a woman's concept of her own femininity affects her response to the operation. In our sex-symbol oriented society, she states that it is not surprising that women often react to the amputation of a breast as a "mutilating assault on femininity."

In a study of psychological adjustment problems of breast cancer patients, Renneker and Cutler (1952) explored the dual psychological conflict posed by breast mutilation and invasion of the body by a potentially lethal disease. They found post-mastectomy depression to be a frequent reaction among their patients, along with feelings of shame and worthlessness emotionally similar to mourning. Their conclusion was that the primary emotional reaction connected with cancer of the breast is not so much a fear of cancer or death, but shock that the basic female role is endangered.

Investigating the individual tactics and institutionalized practices of doctors and nurses dealing with cancer patients, Quint (1965) found that the social consequences of the treatment (mastectomy) cause two significant changes in the individual. The experience initiates a transformation along two basic dimensions of human identification: being a woman, and being alive. The reactions of doctors and nurses contribute to these changes. In Quint's sample, they made it difficult for the patient to ask questions, told her vague generalities about the operation, didn't give details about success rates or her own condition, and refused

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to mention the word "cancer."

Bard and Waxenberg (1957) discovered tremendous evidence of denial in mastectomy patients. Twelve of 19 mastectomy patients they interviewed completely denied the experience. Only 3 felt they now had a serious body disability or deformity, 5 patients didn't admit they had ever had a serious operation, and 7 more refused to admit they had been treated for a tumor. On the other hand, Weinstein, Vetter, and Sersen (1967) found that mastectomy did little to modify the relative value of body parts, but did slightly reduce the subjective value of the breast to their patients.

In examining the coping mechanisms of a group of mastectomy patients, Katz, Weiner, Gallagher, and Hellman (1970) concluded that the cosmetic issue of the loss of a breast seemed more of a threat than the possible threat of a malignancy. They questioned what this represents: displacement, suggestion from the physician that the disease has been caught in time, or if denial of the loss is highly cathected and the visible body part is more difficult for the ego to deal with than a denial of internal cancer. This last theory received some support from an investigation of hysterectomy patients by Patterson and Craig (1963), who concluded that the lack of concern about the loss of the uterus or ovaries in their patients was due to the fact that these organs are not visible or felt. The implication is that were they to lose a visible sexual organ (they use a male's genitals as a comparison) a feeling of mutilation and defeminization might well appear.

Several conclusions about the psychological effects of mastectomy can be drawn from these studies. Denial seems to be a widespread defense

mechanism utilized by mastectomy patients. Problems of adjustment may be intensified by the attitude of doctors and nurses who avoid the subjects of cancer and death, fail to completely explain treatments and success rates, and discourage communications from the patient regarding her feelings and fears. Many investigators report the primary emotional reaction to mastectomy to be the threat to femininity it involves. This is mentioned by almost all the studies cited, attributing to it more prominence even than fear of death from the disease itself.

This last finding, that body mutilation, viewed as an assault upon female identity, is the primary focus of anxiety to a mastectomy patient is especially interesting when one examines the recent literature on body image. Apart from the previously mentioned observation that ours is a highly breast- and appearance-oriented society, recent work has uncovered suggestive differences in the manners in which men and women relate to their bodies. Jourard and Secord (1955) define body cathexis as the degree of satisfaction of a person with aspects of his body. They postulate that the mean body-cathexis rates for 46 selected body parts correlate with the self-cathexis score indicates the subject's feeling toward his body, which is itself a personality variable with mental health implications. They also found that large size of body parts is desirable for males. For females, they found that a positive cathexis was associated with relatively small size for all examined body parts except the bust, for which small size caused dissatisfaction. On the basis of these findings Jourard and Secord question why a woman has positive feelings toward her body when it corresponds to the "ideal;" raising the possibility that her status and security might be conditioned by her perceived and demon-

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strated attractiveness to men. Size of the breasts seems to be an essential component of this.

Kurtz and Hirt (1970) found evidence that variations in physical health are related to variations in body image. Kurtz (1968) postulated that women have more clearly differentiated body concepts than men and tend to like their bodies more. In two later studies (1969, 1971) he attempted to prove this. He indicated the differential attitudes toward the body in our society, in particular the fact that aspects of the female body are held in especially high esteem (i.e., breasts). His results in both studies supported his hypotheses. He indicated that sex differences in body image may actually reflect feelings of masculinity or femininity. This suggests that women's scores on a body image scale may reflect to some extent their feminine self-image.

Evidence of a relationship between body image, general self-concept, and physical health can thus be found in both the body image literature and mastectomy studies. However, no one has investigated the effect of a radical alteration in the body, such as a mastectomy, on body image and self-image (femininity). Jarvis (1965) has complained about the lack of a satisfactory reference to the subject of the breast and body image with regard to mastectomy patients, despite the theoretical interest of such a study. This lack is surprising in view of the major conclusion of most mastectomy studies that the principle psychological trauma of the operation is the mutilation of the breast as a symbol of femininity, and its possible subsequent effects on recovery. To rectify the lack of data in this area, the author decided to examine the psychological effects of mastectomy upon

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several aspects of body image and self-concept. The author expected to determine if mastectomy patients would exhibit large changes in body image, self-concept, and feelings about physical attractiveness (as compared to a control group of biopsy patients who did not need mastectomies and a surgical group) or if the operation of denial would inhibit any change from being demonstrated.

Two control groups were included in the study. A biopsy group of women identical to the mastectomy group but differing in that they didn't have cancer or lose a breast, served as the control for the trauma of simply fearing one might have cancer or lose a breast. A surgical control group of women matched for age with the mastectomy group, undergoing operations keeping them hospitalized a comparable length of time, was included to control for the traumatic effects of major surgery per se.

Berscheid, Walster, and Bohrnstedt's (1972) Body Image Scale was edited for irrelevant items and used as the dependent measure, to be administered both prior to and following surgery. This scale elicits data on body image, self-concept, attitude about the importance of physical attractiveness, and feelings of satisfaction with intimate relationships, all of which were considered important indices of reaction to mastectomy (or surgery). Pre- and post-surgical interviews were developed by the author to supplement the questionnaire with more open-ended questions (where patients could express their fears or feelings) and to lend credence to the cover story, while determining the extent of communication between patient and doctors and nurses.

Method

Subjects

The subjects were female patients at Evanston Hospital, Evanston,

Illinois, admitted for either breast biopsy, possible mastectomy, or some kind of surgery not involving cancer but severe enough to necessitate a hospital stay of at least 7 days. All were private patients, of lower middle to upper middle socioeconomic status. The 44 women were divided into three groups on the basis of type of surgery. The groups are: Mastectomy, consisting of 15 women who entered the hospital for a breast biopsy, and when the results were positive underwent mastectomy at that time; Biopsy, the first control group, consisting of 18 women who entered the hospital for a biopsy, and when it was negative had no further surgery; and the Surgical Control group which included 11 women, age-matched to the mastectomy patients, admitted for various surgical procedures (e.g., hernias, cataracts, bladder, corrective leg surgery, etc.). The mean ages of the subjects in the three groups were: Mastectomy, 51.3 years; Biopsy, 41.3 years, and Surgical Control, 49.7 years. The breast surgery was performed primarily by 3 surgeons specializing in this area.

Subjects were chosen by the author who checked the surgery schedule for the next day each afternoon, selecting suitable patients on the basis of age and type of surgery. The age range was 21 to 67 years, with older and younger patients excluded because of possible confounds associated with their age and the variables under consideration. Patients selected as suitable subjects were approached either by a nurse or the author and asked if they would mind being interviewed. The author served as interviewer in all but one case, when a fellow graduate student did both the pre- and postoperative interview. The interviewer wore a hospital smock and a badge identifying her as a "researcher."

Procedure

In order both to elicit the subjects' cooperation and to gather data to replicate or disprove Quint's findings on communication between

medical personnel and patients, subjects were led to believe that this was a study of psychological reactions to medical problems. The ultimate goal of the study was purported to be the determination of possible need for more psychological training for doctors and nurses to help them handle patients' emotional reactions. The patient was told that the investigator was available for the patient to talk to about her feelings. Several questions were included in the interviews to lend credence to this rationale and obtain the pertinent data.

Since the time between the decision to biopsy a lump and the actual biopsy is so short in most cases, the patients were interviewed on the day before the biopsy, or surgery in the cases of the mastectomy and surgical control patients. The postoperative measurement was conducted 4 to 6 days following the operation, giving the patient sufficient time to physically recover from the ordeal.

The interview consisted of a focussed interview developed by the author, and the edited Berscheid, Walster, and Bohrnstedt Body Image Scale. Approximately one half hour was spent with each patient for each of the pre- and postoperative interviews. Most of the interviews were tape-recorded (with the subject's permission).

Results

The data were broken down for analysis into 30 independent variables and 119 dependent variables, which included the questionnaire questions, administered pre- and postoperatively.

One-way analyses of variance were performed on 11 of the independent variables to determine if the groups differed in any way before the operations. One of these univariate F tests was significant: the test for.

length of time between appearance of symptom and contacting doctor, indicating that women who discover lumps in their breasts report to their doctors significantly faster than those who develop a variety of other symptoms ($F = 4.23$, $df = 2, 41$, $p < .02$). The F for age of patient approached significance ($F = 3.07$, $df = 2, 41$, $p < .057$), indicating that biopsy patients tended to be slightly younger than the other two groups (which were age-matched).

Insert Table 1 about here

A Chi Square Goodness of Fit Test was done on the dichotomous independent variable of spontaneous content of interview. The focussed interviews were examined for spontaneous content indicating fear of mutilation from the operation or fear of cancer and death. A rating of 1 was given to a patient who spontaneously mentioned either of these, 0 to those who did not. The Chi Square was significant beyond the .025 level ($\chi^2_{(2)} = 8.74$, $p < .025$; see Table 2 for χ^2 summary), indicating that mastectomy, biopsy, and control patients are not equally likely to spontaneously mention a fear of disfigurement and death. Upon examination of the actual observed values (Table 2) it becomes evident that mastectomy patients are most likely to spontaneously mention these fears, biopsy patients slightly less so, and surgical controls hardly mention it at all.

Insert Table 2 about here

Total within-groups correlations were computed to determine which questionnaire items clustered together. Three main clusters

emerged: these were body image (Hoyt $R = .92$ preoperatively, $.94$ postoperatively), self-concept (Hoyt $R = .83$ preoperatively, $.77$ postoperatively), and physical attractiveness attitude (Hoyt $R = .73$ preoperatively, $.66$ postoperatively). Four other questionnaire items that seemed to go together were clustered as satisfaction with relationships, with reliabilities of $.67$ and $.56$ pre- and postoperatively, respectively. Unweighted means analysis of variance for repeated measures were performed on each of these four clusters. Two of these F 's were significant; one main effect of self-concept over time, with self-concept declining postoperatively ($F = 4.10$, $df = 2, 41$, $p < .05$), and a main effect of satisfaction with relationships over time, with all groups indicating less satisfaction postoperatively ($F = 3.40$, $df = 2, 41$, $p < .05$). None of the main effects for operation or interactions of operation and time (pre- and postoperatively) was significant.

Insert Table 3 about here

Discussion

The principal hypothesis underlying this study was that mastectomy is psychologically more traumatic than other operations, specifically due to its attack on such emotionally charged organs as the breasts, visible symbols of femininity. The analyses of the independent variables provided some support for this hypothesis. The principal significant differences between women faced with breast surgery and those facing other types of surgery were in their likelihood to express fear of disfigurement or death in the preoperative interview, and the increased speed with which they contacted their physicians upon discovering the symptom. Both of

these indicate a higher level of anxiety associated with breast surgery and the possibility of breast cancer (and all its implications for appearance and longevity). This effect is pronounced despite the serious nature of most of the operations faced by the surgical controls. It seems safe to conclude from this that when the breast is threatened, women are more inclined to try to protect it (by getting immediate care) than other body parts. This appears to reflect a higher level of concern or anxiety connected with the breast than other body parts.

The four clusters emerged from the correlational analysis as expected. Since there is no scale that measures "feminine self-image" the Berscheid, Walster, and Bohrnstedt "Body Image Scale" which includes body image, self-concept, a measure of how important physical attractiveness is to the individual, and a measure of how satisfied the individual is with her spouse or other close (love or romantic) relationships was chosen as the dependent measure. The only significant differences found on these clusters were a decreased level of satisfaction with relationships for all three groups, and a decline in self-concept. Although these results were not exactly as predicted (biopsy and control patients were not expected to change), they seem to indicate some kind of post-surgical depression centering on traits of the patient and her spouse or family. The decline in self-concept might result from a feeling of helplessness, guilt, or shame at having had to be operated on and hospitalized. The decreased satisfaction with relationships may reflect the patient's feelings of neglect or resentment at her helplessness. No other main effects or interactions even approached significance. Closer examination of the data reveals something interesting in the lack of difference, however.

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The means and totals (Table 3) for these clusters indicate that on the two scales reflecting self-image (body image and self-concept) the mastectomy patients did not vary at all pre- and postoperatively, while the other groups did change, significantly so in the case of self-concept. Considering that physical attractiveness did become somewhat more important to the mastectomy patients (especially as compared to the other two groups, although this difference did not reach a significant level) and their satisfaction with their intimate relationships decreased significantly, as predicted, the total lack of change on the two more personal scales becomes more interesting. The individual standard deviations for each mastectomy subject on these scales are also abnormally low, ranging from a high of only 1.6 down to 0, with more mastectomy subjects tending to deviate around 0. This indicates that subjects' scores are about the same for each item both pre- and postoperatively. This abnormal suppression of variance for the scores of mastectomy patients on these two clusters, plus the lack of any change pre- to postoperatively can be interpreted as evidence of denial. These effects do not appear in either of the other two groups, indicating that the mastectomy patients may be protecting themselves by denying the physical change they have undergone. Thus the earlier reports of denial in mastectomy patients (Rosen, 1950, Bard & Waxenberg, 1957, Katz, et al., 1970) are strongly supported by the present study. These findings also cast doubt on the conclusion of Weinstein, Vetter, and Sersen (1967) that the subjective value of the breast remains about the same to a woman following mastectomy -- denial is a likely explanation for their data too.

Since the second measure was conducted so soon after surgery, it

is not clear how long this postoperative denial persists. Possibly as the patient returns to her home and normal life this defense mechanism breaks down or is abandoned. Future investigators might bear this in mind and examine the duration of the effects of denial.

Quint's (1965) findings that doctors and nurses contribute to the adjustment problems of mastectomy patients were not supported by the present investigation. All subjects had been well-informed about the nature and effects of their operations and felt that the doctors and nurses would answer any further questions.

When considered alongside the previous findings in this area, the results of the present investigation support the notion that there are traumatic psychological effects for a woman of amputation of the breast. While these patients were well-informed about the operation and its consequences, they still evidenced substantial denial. Although further assessment of the extent of this trauma and degree (and duration) of denial is desirable, the evidence as it stands should be taken into account by surgeons considering the more radical treatment. Clinicians treating these women should also be aware of this post-surgical denial and the possibility of later maladjustment when this protective mechanism breaks down.⁴

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Table 1
Means and Standard Deviations for
Significant Independent Variables

<u>Variable</u>	<u>Mastectomy</u>		<u>Biopsy</u>		<u>Surgical Control</u>	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Time to call doctor	2.000	2.104	2.056	2.127	4.636	3.641
Age	51.333	13.048	41.333	12.243	49.727	11.603

Table 2
Chi Square on Interview Variable

	<u>Observed Values</u>		<u>Expected Values</u>	
	Yes	No	Yes	No
Mastectomy	10	5	6.82	8.18
Biopsy	9	9	8.18	9.82
Control	1	10	5	6

$$\chi^2_{(2)} = 8.74, p < .025$$

Table 3

Means and Totals for Cluster Scores*

Cluster		Mastectomy		Biopsy		Surgical Control	
		\bar{X}	Total	\bar{X}	Total	\bar{X}	Total
Body Image	Pre	59.13	887	57.39	1033	57.73	635
	Post	59.06	886	58.44	1052	57.09	628
Self-Concept	Pre	13.87	208	14.33	258	14.18	156
	Post	13.87	208	16.33	294	14.64	161
Physical Attractiveness Attitude	Pre	12.53	188	12.94	233	13.00	143
	Post	11.67	175	14.39	259	13.00	143
Satisfaction with Relationships	Pre	7.47	112	5.94	107	6.18	68
	Post	7.87	118	6.28	113	6.55	72

*A higher score indicates lower body image, lower self-concept, less importance of physical attractiveness, and less satisfaction with relationships.

Footnotes

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³Current reports vary in their estimation of the psychological importance of the breast. The Berscheid, Walster, and Bohrnstedt study (1973) found the breast to be of relatively minor concern. However, a recent Gallup poll (1973) indicated breast cancer to be a primary worry of American women.

⁴Thirty of the original subjects responded to a request for follow-up information 6 to 11 months following their surgery. Thirteen of the 15 mastectomy patients responded (a higher per centage than either of the other two groups) and 6 spontaneously wrote letters explaining their reactions to the operation. Five of these 6 mentioned the difficulty of adjusting upon returning home from the hospital, and cited the importance of support from their husbands in getting them through that period. One woman said she had been in a state of elation at being alive after the operation, and indicated that her difficulties in adjustment began when she returned home and started seeing her friends. Thus it appears that upon release from the hospital, denial does break down and difficulties in adjustment begin.